

I CLAIM:

1. A wireless digital telecommunications system which comprises a main transmitter and a terminal, the main transmitter being arranged to transfer broadcast services to the terminal in a multiplexed frame format at one frequency and an auxiliary transmitter whose coverage area is substantially smaller than the coverage area of the main transmitter and which is synchronized with the main transmitter and arranged to send broadcast services to the terminal in a predetermined time slot of the main transmitter's multiplex frame.

2. A telecommunications system according to claim 1, wherein the time slot intended for the auxiliary transmitter is determined in a control and identification data field of the multiplexed frame sent by the main transmitter, the auxiliary transmitter being arranged to receive the frame.

3. A telecommunications system according to claim 1 wherein the main transmitter and the auxiliary transmitter are synchronized using a separate reference signal.

4. A telecommunications system according to any one of claims 1 to 3, wherein the auxiliary transmitter is arranged to send a code with broadcast services, the code being determined on the basis of the location of the auxiliary transmitter's coverage area, and the terminal being arranged to configure with services of the auxiliary transmitter on the basis of the code.

5. A telecommunications system according to claim 4, wherein the terminal is arranged to determine its location data on the basis of which the terminal is arranged to determine the code of the auxiliary transmitter used in the location area of the terminal.

6. A telecommunications system according to claim 5, wherein the terminal is arranged to determine its location data by means of a satellite location system.

7. A telecommunications system according to claim 1 wherein the auxiliary transmitter is arranged to send terminal-specific subscriber services to

at least one terminal in a time slot of the main transmitter's multiplex frame predetermined for the auxiliary transmitter.

8. A telecommunications system according to claim 7, wherein the system further comprises at least one server transmitting terminal-specific subscriber services, there being a data transmission connection from the server to at least one auxiliary transmitter, and at least one terminal which is arranged to establish a data transmission connection to at least one server transmitting terminal-specific subscriber services, the data transmission connection being used for transmitting orders of said subscriber services to said server.

9. A telecommunications system according to claim 8 wherein the server transmitting terminal-specific subscriber services is arranged to establish a connection to at least one subscriber service server the services of which the server transmitting subscriber services is arranged to transfer to the auxiliary transmitter for transmission to the terminal that has made the order.

10. A telecommunications system according to claim 9, wherein the server transmitting terminal-specific subscriber services is arranged to form selection data of the subscriber services on the basis of control and identification data in the multiplex frames which it has received and which are used for transmitting subscriber service files, and the selection data are supplied to at least one terminal without subscriber service files.

11. A telecommunications system according to any one of claims 8 to 10 wherein the terminal is arranged to receive information on the capacity reserved for terminal-specific subscriber services from a local output in the control and identification data fields of the multiplex frame of the local output, and the terminal is arranged to establish a data transmission connection to at least one server transmitting terminal-specific subscriber services, the data transmission connection being used for reserving capacity from the local output for a subscriber service to be transmitted to the terminal.

12. A telecommunications system according to claim 1 wherein the identification data of the auxiliary transmitters and terminals are formed according to the address practice of an Internet protocol (IP).

13. A telecommunications system according to claim 12 wherein the identification data of mobile terminals are formed according to the address practice of a Mobile IP protocol.

14. A transmitter for sending broadcast services in a multiplexed frame format at one frequency wherein the transmitter is arranged to synchronize with a main transmitter whose coverage area is substantially larger than the coverage area of the transmitter, and wherein the transmitter is arranged to transmit broadcast services in a predetermined time slot of the main transmitter's multiplex frame.

15. A transmitter according to claim 14, wherein the transmitter is arranged to receive the multiplex frame sent by the main transmitter, and the transmitter is arranged to determine at least one time slot intended for said transmitter on the basis of a control and identification data field in the multiplex frame of the main transmitter.

16. A transmitter according to claims 14 or 15 wherein the transmitter is arranged to synchronize with the main transmitter by means of a separate reference signal.

17. A transmitter according to claim 14 wherein the transmitter is arranged to send a code with broadcast services which is determined on the basis of the location of the coverage area of said transmitter.

18. A transmitter according to claim 14 wherein the transmitter is arranged to send terminal-specific subscriber services to at least one terminal in the time slot intended for the transmitter.

19. A transmitter according to claim 18 wherein a data transmission connection is established from the transmitter to at least one server transmitting terminal-specific subscriber services, the server being arranged to establish a connection to at least one subscriber service server the services of which said server transmitting subscriber services is being arranged to transmit to said transmitter for transmission to the terminal that has made the order.

20. A transmitter according to claim 14 wherein the identification data of the transmitter are formed according to the address practice of an Internet

protocol (IP).

21. A terminal for receiving broadcast services transmitted in a multiplexed format at one frequency, the terminal being arranged to receive a multiplex frame sent by a main transmitter and to configure with the desired service on the basis of the information in the control and identification data field of said frame wherein the terminal is arranged to configure with a local service sent by another transmitter on the basis of the information in the control and identification data field of said frame.

22. A terminal according to claim 21 wherein the terminal is arranged to determine its location data and the code used by said other transmitter on the basis of these location data.

23. A terminal according to claim 22 wherein the terminal is arranged to determine its location data by means of a satellite location system.

24. A terminal according to any one of claims 21 to 23, wherein the terminal is arranged to establish a data transmission connection to at least one server transmitting terminal-specific subscriber services, said data transmission connection being used for transmitting the orders of the subscriber services to the server, the terminal being arranged to receive the subscriber services in a local output.

25. A terminal according to claim 24 wherein the terminal is arranged to receive selection data of subscriber service files without the subscriber service files, the selection data of the subscriber service files being formed on the basis of control and identification data of the multiplex frames used for transmitting subscriber service files.

26. A terminal according to claim 24 wherein the terminal is arranged to receive information on the capacity reserved for terminal-specific subscriber services from the local output included in the control and identification data field in the multiplex frame of the local output, and the [said] terminal is arranged to establish a data transmission connection to at least one server transmitting terminal-specific subscriber services, the data transmission connection being used for reserving capacity for the subscriber service to be transmitted to said

terminal from the local output.

27. A terminal according to claim 21 wherein the identification data of the terminal are formed according to the address practice of an Internet protocol (IP) or a Mobile IP protocol.